

TABLE 2.—Instrumental seismological reports, October, 1920—Contd.

Date.	Char-acter.	Phase.	Time.	Period T.	Amplitude.		Dis- tance.	Remarks.
					A <sub>m</sub>	A <sub>n</sub>		
CANADA. Dominion Meteorological Service, Victoria.								
1920.			H. m. s.	Sec.	μ	μ	Km.	
Oct. 1	1	P.	19 10 10				1,400	Probably Alaska.
		M.	19 12 37		*1,000			
		F.	19 21 28					
	5	L.	19 10 51					Pender Island re-
		M.	19 12 49		*400			ported quake a
		F.	19 17 15					12:35 p. m. Pacif.
	7	P?	21 06 18				8,300?	Stand. Time.
		S.	21 15 53					
		L.	21 29 10					
		M.	21 34 05		*500			
		F.	22 35 27					
	8	S?	17 07 47					
		L?	17 12 17					
		L.	17 14 29					
		M.	17 17 05		*300			
		F.	17 37 23					
	12	P.	7 43 56					
		L.	7 47 23					
		M.	7 53 46		*200			
		F.	7 58 41					
	15	L.	14 56 12					
		M.	14 58 40		*500			
		F.	15 07 02					
	18	P.	8 15 58					
		S.	8 21 02					
		L.	8 28 25					
		M.	8 36 46		*1,000		3,170	
		F.	10 03 20					
	18	P.	12 14 00					
		M.	12 15 14		*200			
		F.	12 17 27					
	18	P.	12 52 20				450	Merged into ne-
		M.	12 53 19		*500			quake.
				VERTI- CAL.				
		P.	12 53 10	2			520	
		L.	12 54 26	7				
		M.	12 54 26	10		3		
		F.	13 02 00					
	18	P.	13 01 12				660	
		M.	13 02 42		*1,000			
		F.	13 12 01					
				VERTI- CAL.				
		P.	13 02 00	2.5			840	
		L.	13 04 00	5				
		M.	13 04 15	7		7		
		F.	13 14 00					
	20	P.	10 43 12					
		M.	11 00 25		*200			
		F.	11 33 22					
	22	S or L.	12 33 00					
		eL.	12 48 10					
		M.	12 57 35		*500			
		F.	13 43 20					
	23							Clock stopped.
	26	P.	19 30 29					
		L.	19 31 58					
		M.	19 33 28		*200			
		F.	19 34 25					
	28	L.	7 36 31					
		M.	7 44 23		*400			
		F.	8 29 38					
	28	P?	13 05 06?					
		or 08 03						
		S or L.	13 12 58					Press dispatches
		eL.	13 13 08					say 900 miles
		M.	13 13 57		*500			from La Plata.
		eL.	13 20 40					
	28	P.	13 31 39					
		L.	13 35 35					
		M.	13 40 01		*1,100			
		F.	15 20 50					

\*Trace amplitude.

## SEISMOLOGICAL DISPATCHES.

[Collected by Earthquake Station, Georgetown University, Washing-  
ton, D. C.]

*Clarmont-Ferrant, France, October 4.*—An earth shock was felt this morning in the vicinity of Issoire, Depart-  
ment of Puy-de-Dome. The tremors lasted only a few  
seconds and no damage was reported.—*Associated Press.*

*London, October 8.*—Two violent earth tremors were  
felt in Mantua, Northern Italy, at midnight Wednesday,  
according to a telegram to the Rome Epoca, says a Cen-  
tral News dispatch from Rome, dated Thursday. The  
inhabitants fled into the streets in alarm. The message  
reported some property damage had been caused.—  
*Associated Press.*

*Mexico City, October 9.*—Reports received here of an  
earthquake yesterday in Northwestern Vera Cruz say  
there were no casualties.—*Associated Press.*

*Vera Cruz, October 9.*—Northwestern sections of the  
State of Vera Cruz were severely shaken by an earth-  
quake at 10:30 o'clock yesterday morning. The regions  
of Cordoba, Jalapa, Teccele, Cosautlan and the entire  
district which was visited by the earthquake disaster of  
last January felt the full strength of the shock. No  
casualties had been reported, but property damage was  
said to be heavy.—*Associated Press.*

*Manila, P. I. October 10.*—A severe earthquake to-day  
at Baguio, capital of Bengust, Province of Yuzon, about  
150 miles north of here, damaged the observatory there,  
broke water mains on the military reservation and  
cracked a number of concrete walls. A landslide oc-  
curred as a result of high water in the river at Baguio.  
No loss of life was reported. The shock was felt slightly  
in Manila.—*Associated Press.*

*Toulouse, France, October 20.*—Earthquake shocks  
were felt yesterday in several places in the Hautes Pyren-  
nese Department.—*Associated Press.*

*Granada, Spain, October 23.*—An earthquake shock  
lasting 10 minutes was felt at 6 o'clock Friday evening  
throughout the Province. Damage was done in some  
villages, but it has not been ascertained as yet whether  
there were any casualties.—*Associated Press.*

*Redding, Calif., October 27.*—Lassen Peak was in pro-  
nounced eruption to-day. For more than half an hour,  
beginning at 2:40 p. m., black smoke rolled out of the  
northern part of the crater. To-day's eruption was the  
second outpouring in less than a week. A substantial  
outbreak occurred Saturday.—*Associated Press.*

*Valparaiso, October 28.*—Violent earthquake shocks  
with a vertical movement shook the Provinces of Ata-  
cama and Coquimbo, north of this city, at 8:05 o'clock  
this morning, the tremors lasting 2½ minutes. The  
cities of Copiapo and Valanar, in the Province of Ata-  
cama, were most seriously shaken, old structures in both  
towns being damaged. Reports received here state no  
one was injured during the earthquake.—*Associated*  
*Press.*

## NEWSPAPER CLIPPINGS.

[By the Associated Press.]

*Washington, October 22.*—An earthquake shock of con-  
siderable intensity was recorded by the seismograph of the  
Georgetown University at 7:19 o'clock this morning, con-  
tinuing for nearly an hour. It is estimated that the center  
of the disturbance was 4,300 miles from Washington.

*Buenos Aires, October 28.*—El seismografo de la Uni-  
versidad de la Plata ha registrado un fuerte terremoto a  
las 8.52 minutos. Se estima que el centro del disturbio  
esta situado a 1,400 kilometros de distancia.

Reports for October, 1920, have not been received from  
the following stations:

ALASKA. U. S. C. & G. S. Magnetic Observatory, Sitka.  
ARIZONA. U. S. C. & G. S. Magnetic Observatory, Tucson.  
HAWAII. U. S. C. & G. S. Magnetic Observatory, Honolulu.  
KANSAS. University of Kansas, Lawrence.  
MARYLAND. U. S. C. & G. S. Magnetic Observatory, Cheltenham.  
MASSACHUSETTS. Harvard University, Cambridge.  
MISSOURI. St. Louis University, St. Louis.  
NEW YORK. Canisius College, Buffalo; Fordham University, New  
York.  
PORTO RICO. U. S. C. & G. S. Magnetic Observatory, Vieques.

\*Trace amplitude.

TABLE 2.—Instrumental reports—Continued.

Date.	Char-acter.	Phase.	Time.	Period T.	Amplitude.		Dis-tance.	Remarks.
					A <sub>m</sub>	A <sub>N</sub>		

HAWAII. U. S. C. & G. S. Magnetic Observatory, Honolulu—Con.

1920.			H. m. s.	Sec.	μ	μ	Km.	
Sept. 21	-----	P. ....	17 56 54	17	-----	-----	-----	
		eS. ....	18 01 00	17	-----	-----	-----	
		eL. ....	18 04 00	19	-----	-----	-----	
		M. ....	18 13 18	19	*400	-----	-----	
		C. ....	18 17 ..	19	-----	-----	-----	
		F. ....	19 11 ..	17	-----	-----	-----	
23	-----	P. ....	5 48 18	17	-----	-----	-----	L difficult to place.
		S. ....	5 52 48	17	-----	-----	-----	
		eL. ....	5 55 48	17	-----	-----	-----	
		M. ....	6 11 42	17	*200	-----	-----	
		C. ....	6 13 54	17	-----	-----	-----	
		F. ....	6 57 ..	-----	-----	-----	-----	
24	-----	eS. ....	22 16 30	17	-----	-----	-----	This interpretation adopted after comparison with Tucson and Vieques.
		L. ....	22 29 06	17	-----	-----	-----	
		M. ....	22 36 48	17	*900	-----	-----	
		C. ....	22 39 ..	-----	-----	-----	-----	
		F. ....	23 30 ..	-----	-----	-----	-----	

## MARYLAND. U. S. C. &amp; G. S. Magnetic Observatory, Cheltenham.

1920.			H. m. s.	Sec.	μ	μ	Km.	
Sept. 8	-----	eN. ....	2 10 44	-----	-----	50	-----	L waves not clearly present. Nothing on E-W.
		iN. ....	2 20 45	-----	-----	-----	-----	
		F. ....	2 42 ..	-----	-----	-----	-----	
20	-----	iN. ....	14 58 05	-----	-----	-----	-----	P tremors faint in both components.
		eN. ....	15 04 55	-----	-----	-----	-----	
		eS. ....	15 16 09	-----	-----	-----	-----	
		L. ....	15 38 11	28	-----	-----	-----	
		L. ....	15 39 49	-----	-----	-----	-----	
		M. ....	15 46 36	18	90	-----	-----	
		M. ....	15 51 27	17	-----	290	-----	
		C. ....	15 50 ..	18	-----	-----	-----	
		C. ....	16 00 ..	17	-----	-----	-----	
		F. ....	16 24 ..	17	-----	-----	-----	
		F. ....	17 21 ..	17	-----	-----	-----	
27	-----	eN. ....	5 42 28	-----	-----	-----	-----	L waves not clearly present on E-W.
		eN. ....	5 42 35	-----	-----	-----	-----	
		eL. ....	5 42 43	-----	-----	-----	-----	
		M. ....	5 43 46	12	-----	40	-----	
		C. ....	5 46 ..	9	-----	-----	-----	
		F. ....	5 48 ..	-----	-----	-----	-----	
		F. ....	5 58 ..	-----	-----	-----	-----	

## PORTO RICO. U. S. C. &amp; G. S. Magnetic Observatory, Vieques.

1920.			H. m. s.	Sec.	μ	μ	Km.	
Sept. 8	-----	ePR <sub>N</sub> ..	2 06 34	-----	-----	-----	-----	L waves not present; interpretation adopted after comparison with Tucson and Honolulu.
		ePR <sub>m</sub> ..	2 06 52	-----	-----	-----	-----	
		S <sub>m</sub> ..	2 15 06	-----	-----	-----	-----	
		F <sub>m</sub> ..	2 20 ..	-----	-----	-----	-----	
		F <sub>m</sub> ..	2 29 ..	-----	-----	-----	-----	
20	-----	ePR <sub>1N</sub> ..	15 01 36	-----	-----	-----	-----	This interpretation adopted after comparison with Tucson and Honolulu.
		ePR <sub>1m</sub> ..	15 01 35	-----	-----	-----	-----	
		ePR <sub>2m</sub> ..	15 05 20	-----	-----	-----	-----	
		iSR <sub>1m</sub> ..	15 18 09	16	-----	-----	-----	
		L <sub>m</sub> ..	15 40 06	38	-----	-----	-----	

\*Trace amplitude.

Date.	Char-acter.	Phase.	Time.	Period T.	Amplitude.		Dis-tance.	Remarks.
					A <sub>m</sub>	A <sub>N</sub>		

PORTO RICO. U. S. C. & G. S. Magnetic Observatory, Vieques—Con.

1920.			H. m. s.	Sec.	μ	μ	Km.	
Sept. 20	-----	L <sub>N</sub> ..	15 41 13	23	-----	70	-----	
		M <sub>N</sub> ..	15 42 01	26	-----	-----	-----	
		M <sub>N</sub> ..	15 42 50	24	-----	80	-----	
		C <sub>N</sub> ..	15 49 ..	18	-----	-----	-----	
		C <sub>N</sub> ..	15 58 ..	18	-----	-----	-----	
		L <sub>m</sub> PR <sub>m</sub> ..	16 44 ..	-----	-----	-----	-----	
		F <sub>N</sub> ..	16 59 ..	18	-----	-----	-----	
		F <sub>N</sub> ..	17 17 ..	16	-----	-----	-----	
24	-----	iP. ....	21 59 46	6	-----	-----	-----	Long waves not present on NS; P and S both well marked.
		iS. ....	22 03 45	13	-----	-----	-----	
		L <sub>m</sub> ..	22 05 13	-----	-----	-----	-----	
		M <sub>m</sub> ..	22 05 24	10	30	-----	-----	
		C <sub>m</sub> ..	22 06 ..	-----	-----	-----	-----	
		F <sub>N</sub> ..	22 11 ..	-----	-----	-----	-----	
		F <sub>N</sub> ..	22 28 ..	-----	-----	-----	-----	

## MASSACHUSETTS. Harvard University, Cambridge.

1920.			H. m. s.	Sec.	μ	μ	Km.	
Aug. 3	-----	O. ....	19 57 15	-----	-----	-----	7,770	69° .93 arc; E gives P and S less distinct; M phases distorted by winding drums.
		P <sub>N</sub> ..	20 08 24.5	3	-----	-----	-----	
		S <sub>N</sub> ..	20 17 32.5	-----	-----	-----	-----	
		eL <sub>N</sub> ..	20 31 32.5	58	-----	-----	-----	
		M <sub>N</sub> ..	20 36 ..	20	-----	-----	-----	
		C. ....	20 40 ca.	-----	-----	-----	-----	
		F <sub>N</sub> ..	21 44 ca.	-----	-----	-----	-----	
13	-----	eN. ....	2 13 04	3	-----	-----	-----	Possibly only a group of micros; not recognizable as possibly seismic on E record; weak micros were running before and after these phases.
		F. ....	2 14 37	-----	-----	-----	-----	
		eN. ....	2 21 24	3	-----	-----	-----	
		F. ....	2 23 56	-----	-----	-----	-----	
20	-----	O? ..	16 14 59	-----	-----	-----	9,315?	Distance from L-S; L difficult to fix. Record indistinct on NS.
		e <sub>m</sub> ..	16 27 07	-----	-----	-----	-----	
		S <sub>m</sub> ..	16 37 53	-----	-----	-----	-----	
		L <sub>m</sub> ..	16 51 47	20	-----	-----	-----	
		L <sub>m</sub> ..	16 55 49	25	-----	-----	-----	
		L. ....	17 05 23	18	-----	-----	-----	
		L. ....	17 17 00	16	-----	-----	-----	
		L. ....	18 04 31	16	-----	-----	-----	
		F. ....	18 41 ca.	-----	-----	-----	-----	
21	-----	L <sub>m</sub> ? ..	21 32 20	15	-----	-----	-----	Not legible on N. Periods decrease rapidly to 8 secs.
		L. ....	21 34 36	15	-----	-----	-----	
		F. ....	21 38 37	-----	-----	-----	-----	
26	-----	O? ..	22 58 55	-----	-----	-----	8,050?	Deducted terms from E.; L-0/8050 kms. gives VL 231.6 kms. per sec. S <sub>N</sub> doubtfully fixed. iPS 23-10-18. Great irregularity in period after initial L.
		iP <sub>m</sub> ? ..	23 10 19	2	-----	-----	-----	
		S <sub>N</sub> ..	23 18 59	6	-----	-----	-----	
		S <sub>m</sub> ..	23 19 41	6	-----	-----	-----	
		e <sub>N</sub> ..	23 30 54	7	-----	-----	-----	
		eL <sub>N</sub> ..	23 33 10	26	-----	-----	-----	
		eL <sub>m</sub> ..	23 33 17	25	-----	-----	-----	
		L <sub>m</sub> ..	23 36 30	20	-----	-----	-----	
		L <sub>N</sub> ..	23 39 00	20	-----	-----	-----	
		L <sub>N</sub> ..	23 43 00	15	-----	-----	-----	
		F <sub>N</sub> ..	0 36 ca.	-----	-----	-----	-----	

